

DESIGNS

FOR

COTTAGE AND VILLA
ARCHITECTURE;

CONTAINING

PLANS, ELEVATIONS, SECTIONS,
PERSPECTIVE VIEWS, AND DETAILS,

FOR THE

ERECTION OF COTTAGES AND VILLAS.

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INTRODUCTION.

ENGLAND has been justly designated a cultivated garden; and, perhaps, in no particular does she possess a greater pre-eminence over the other European nations than in the beauty and neatness of her rural edifices, whether they be considered as specimens of architectural skill, as objects of ornament, or as dwellings adapted for the general purposes of life, on the best and most acknowledged principles of utility, comfort, and economy. An Englishman, when he first travels on the Continent, with every disposition to discover and confirm the superiority of his own country, particularly remarks, as one of the causes of that superiority, the comparatively small number of suburban villas which are to be seen in the vicinity of even the largest towns, and which form such a delightful feature in the landscape scenery of England. On minute inquiry, he finds that this difference arises from the peculiar habits and character of the people; and that a German, who has realized an independence by trade, or any other pursuit, instead of retiring into the country to enjoy it, removes from a small town or village, in which the fortune was made, to a larger one; whereas, it is the exact reverse with an Englishman, in whose mind the idea of retirement from business and a country life are inseparably united: and thus, *par eminence*, England becomes the country of suburban villas.

The architectural style of the dwellings of the different classes of society is certainly an object of great importance, and every attempt towards the improvement of it is worthy of serious consideration. The efforts of architects in all ages have hitherto been generally directed to public buildings, and to the mansions of noblemen; and those who may be considered as composing the middling orders of society have been for the most part left to become their own architects. Hence the tardiness with which the improvements made in the accommodation, arrangement, and exterior beauty of the mansions of the wealthy have found their way to the dwellings of the middling classes. It is therefore one of the chief objects of the present work, to point out by appropriate designs, how the residence of the man of wealth, and the dwellings of a more humble grade, may in a degree, be equalized as far as regards essential comfort, convenience, and beauty.

A series of published designs cannot but prove of great benefit, not only to the experienced; but also to the amateur architect; for the first step towards the introduction of improvement in the practice of any art, is to familiarize the minds of the practitioners with the deviations from usual practice, which may be considered as the foundation of those improvements. In rural architecture, particularly, the only means of accomplishing that end, is the study of published designs, for no local builder can be supposed to have had either leisure or opportunity to inspect the different improvements which have gradually or immediately taken place in his own country, or which may be the result of foreign talent. Without recourse to a book of designs, the builder must in his own plans be necessarily tame and uniform, his edifices will be but a copy of each other, and that which he intended for an improvement, may, in reality, be a deformity.

A most important advantage may be derived from the details of construction which accompany the designs; and the practical utility of this department of the work must necessarily carry with it its own recommendation, inasmuch as it is not only the best adapted for initiating the young architect in the principles of architectural taste, but it also furnishes him with the means of making use of the specified improvements which it is one of the objects of the present work to introduce.

It is an acknowledged fact, that many persons are deterred from entering upon the erection of a villa or other buildings from a want of knowledge of the expense to be incurred. Each design, therefore, will be accompanied by an estimate of the gross expense for which the building may be erected. It must also be considered as a valuable feature of this work, that every builder, when he has had laid before him one of these designs, with the specification of the details of construction, will always be able to form an estimate suitable for contract or actual execution.

In regard to the different styles of architecture which are displayed in the designs of the present work, much must be necessarily left to the taste of the projector, as one may prefer a mixed style of architecture, while another gives the preference to the pure Grecian, Italian, Tudor, or Elizabethan, and in this respect the fashion of the day possesses no little influence.

By a practical application of the principles contained in the following pages, and a strict attention to the details and other minutiae, which are designedly given for the uninitiated in the science of architecture or the art of building, many of the obstacles will be removed which at present stand in the way of the erection of our suburban villas, whilst at the same time, the exterior beauty of the edifice will be improved, with a corresponding increase of interior comfort, convenience, and utility.

PRELIMINARY REMARKS,

AS TO SITUATION, &c.

BEFORE we attempt to explain the details of the designs contained in this work, it will not be considered either uninteresting or unprofitable to make a few remarks upon those preliminary and important points which ought to be taken into mature consideration before the resolution be finally adopted to erect a dwelling on any given site.

In the erection of every building, destined as a human habitation, the selection of a healthy and suitable situation is of primary importance. A culpable inattention to this prudential rule is the cause of much subsequent disappointment, and, not unfrequently, disheartens the proprietor from prosecuting those improvements which may have subsequently been found necessary to establish or increase the comfort and convenience of the newly-erected residence. An extensive prospect is certainly a great desideratum in the choice of a situation, but the most delightful views will not compensate for the absence of those essential advantages and indispensable comforts, without which no dwelling is complete, and can scarcely be called habitable. A damp situation is, of all others, to be avoided; for neither beauty of style, nor taste in the ornamental departments, nor judgment in the construction of the requisite conveniences, can, in any degree, compensate for those evils which are the invariable results of a low and damp situation. Health, to maintain which is always a primary object with those who expend their fortunes in the erection of a country residence, may be daily and hourly sacrificed, and property is injured by the imperceptible destruction of the interior decorations, furniture, and wearing apparel. Extensive repairs are constantly required,

and one injury or dilapidation is no sooner remedied, than another presents itself, engendered by the dampness of the situation. The nature of the soil and sub-soil, and the character of the surface, should, therefore, be the first objects of examination in the selection of an appropriate site for a dwelling. A light, gravelly foundation, on account of its porosity, is to be preferred to one of a thick, tenacious clay, which, on account of its strong adhesive power, prevents the filtration of the water, and thereby imparts a continual dampness to a house, causing it to be both offensive and unwholesome. The vicinity of marshy and stagnant waters is a most improper site for a dwelling; for, independently of the malaria which issues from those waters, especially in summer, they create an atmospheric dampness, which communicates itself to the surrounding dwellings, and is the great cause of epidemical diseases.

The exposure of a building to particular winds is another material point to be taken into consideration. A house that is wholly unsheltered, particularly from the north and the east, can never be a suitable habitation for a family, especially if composed of children. Art may indeed accomplish much in preventing the evils resulting from an injudicious situation. Trees are the best and most ornamental shelter, but they are of slow growth, and, consequently, the evil may be experienced before the remedy can be brought into actual operation. It is, therefore, of no minor importance, that we should consider well the greater or less exposure of the situation, before it be finally determined upon as the site of a country residence.

To secure a good prospect, the situation of a house in reference to the prevailing and colder winds is frequently altogether neglected, and that which may be considered as of the greatest importance, is treated as though it were not worth a moment's consideration. In the choice of a proper aspect for a dwelling, climate must be considered; for that which would be advisable in England, would be an injudicious choice in the more southern countries of Europe. The south, or the south-east, is the most proper aspect for an English dwelling, and at the same time it enables the builder to give a northern aspect to some of the domestic offices, such as the dairy, the pantry,

the cellar, &c. The most wholesome aspect for a bed-room is decidedly the south-east; and, to a valetudinarian, the northern is the most injurious. The architectural excellence of a house will, therefore, in a great measure, depend upon the greater or less degree of judgment shown in the choice of the aspect of the habitable rooms; but it is certain that those who have not had much experience in the selection of a situation, are, generally, more captivated with the appearance of the exterior, than with the existence of those positive advantages, without which no dwelling can be said to be complete, nor to possess the requisite comfort and convenience.

The facility with which water can be obtained, as well as its character, are no trifling considerations in the selection of a situation. There cannot, perhaps, possibly exist a greater drawback to the value of a house than a supply of bad water, or a scarcity of it when it is good. There are some departments in the domestic arrangements of a family to which rain-water is inapplicable, even if a regular supply of it could be always obtained. The health of a family is greatly dependent upon the nature of the water which they consume, and, consequently, an inattention to this very important point in choosing a situation for a residence has proved the after-cause of universal dissatisfaction, if not of the abandonment of the premises altogether.

An English cottage is proverbially characteristic of internal comfort and exterior neatness; it must however be observed, that in the style of architecture adopted by our forefathers in the erection of their country dwellings, a taste for picturesque beauty was little consulted, and such an uniform and monotonous character was imparted to them, that they often appear to deform rather than to enliven our landscape scenery. It ought therefore to be the aim and business of the young architect, not only to inform himself upon all that relates to actual fitness in a building, and whatever contributes to the expression of purpose, but also to those circumstances in style and situation which are calculated to operate on the imagination. With this view, the accompanying designs are intended to exhibit to what extent improvements in our rural edifices may be applied even in the smallest dwellings, and how

the various degrees of architectural style or beauty may be produced in cottages. It is evident that to introduce irregularity of form in buildings is an architectural refinement of the present age; and it is not less certain that irregular buildings please, partly with reference to their picturesque effect, and partly as being characteristic of some particular architectural style, found to exist in ancient buildings. The castellated architecture of the present day is evidently more an imitative style than one of picturesque beauty, and the irregular cottage style depends more on its broken lines, than on its being an imitation of any thing that has previously existed. It will however be perceived, by a strict examination of the designs contained in this work, that in the selection and combination of the different styles, care has been taken to preserve the picturesque character of the edifice, with every requisite attention to comfort, convenience, and economy.

The art of arranging villas in England is far better understood than the construction of cottages; the reason of this is, that the occupants of the latter description of residence have hitherto been deficient in that degree of cultivation which is necessary to the display of what is considered good taste, and have neglected to call in the assistance of professional men. The occupiers of villas, on the contrary, have not only possessed more cultivation and taste than the others, but, from their wealth, have been able to command the services of all who possessed an ability to render them assistance. Hence it has followed, that the villas of England, though different in some particulars, are yet decidedly superior to those of every other country. It is, however, for the purpose of removing the impediments which sometimes exist in obtaining the practical assistance of scientific men, that the present work has been projected. By a simple examination of the designs, details, &c. with a correct estimate of the expense, the individual projecting the erection of a cottage or villa, can render himself at once master of the subject; he can be his own overseer; and, with the practical instructions laid before him, he becomes a judge of the fitness of the execution, and frees himself from the possibility of imposition.

SPECIFICATION AND DETAILS

OF

DESIGNS FOR

COTTAGES AND VILLAS.



COMMENCING with the more simple style of architecture, we have given in Plate I. a perspective view, and the ground plan for a cottage, constructed in the old English style of domestic architecture, consisting of two parlours, a kitchen, larder, store-room, and water-closet, on the ground-floor, and three bed-rooms on the chamber-floor. This method of erection, combined with the present improved and scientific state of building, may be very properly and economically introduced in any secluded situation where picturesque outline may be a desideratum. The building is to be constructed with framed quarterings, properly and securely fixed upon a stone or brick plinth, brick-nogging being introduced between the quarterings. The inside is to be properly plastered, and the outside between the quarterings also plastered and rough cast; or a more lasting and substantial method would be, to render the outside with cement, and paint it: the whole of the timbers are to be coloured, in imitation of oak, with a composition of coal tar and Roman ochre. The terrace is a matter of secondary consideration, and must entirely depend upon the locality of the situation; the building being complete without it. It is proposed to pave the porch, passages, and water-closet, with York paving; and the kitchen, larder, and store-room, with red paving-tiles; the floor-joist of the parlours to be $4\frac{1}{2}$ inches \times 2 inches, properly notched on, and nailed to oak sleepers, bedded on brickwork at proper distances; the floors to be of $1\frac{1}{4}$ inch yellow deal; the architraves to doors, &c., will be merely chamfered on each

edge, to correspond with the skirting and panelling of room, for which see the sheet of detail. The joist for chamber-floor to be 9 inches \times 2½ inches, sound-boarded and pugged, well notched and securely nailed to the wall-plates: the floor to be laid with one-inch yellow deal; the doors for this floor, with the architraves, &c. may be finished in a similar manner to those on the ground story. The frame of the roof, being small, will not require principals, but couples and collar pieces at proper distances; purlins, 5 inches \times 4 inches; couples, 5 inches \times 3 inches; common rafters, 3½ inches \times 2 inches; hips and valleys, 6 inches \times 2 inches; the whole properly and well secured to the wall-plate. This cottage, according to the accompanying drawings, when completely finished, with every requisite, may be erected for the sum of £350.

Plate II.

Shows a longitudinal section and chamber plan.

Plate III.

Elucidates the various details applicable to the following figures:

Figure 1. Shows the method of framing and securing the angular posts into the principal wall-plates of the building.

A A. Principal wall-plates.

B B. Angular posts.

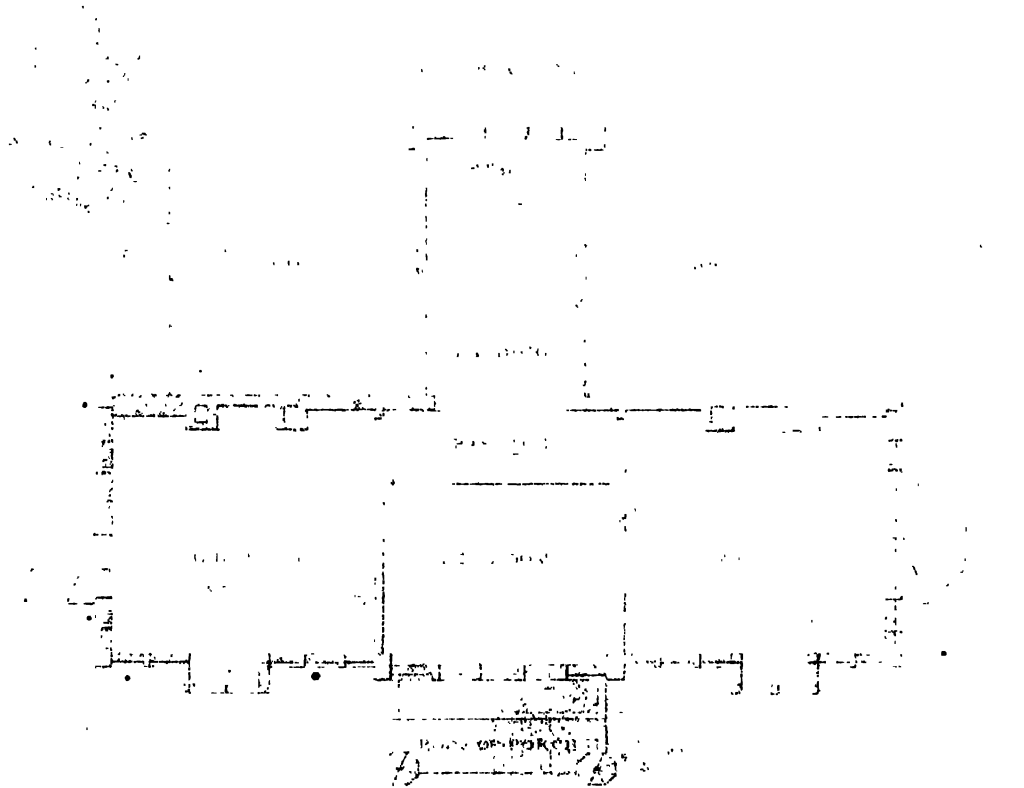
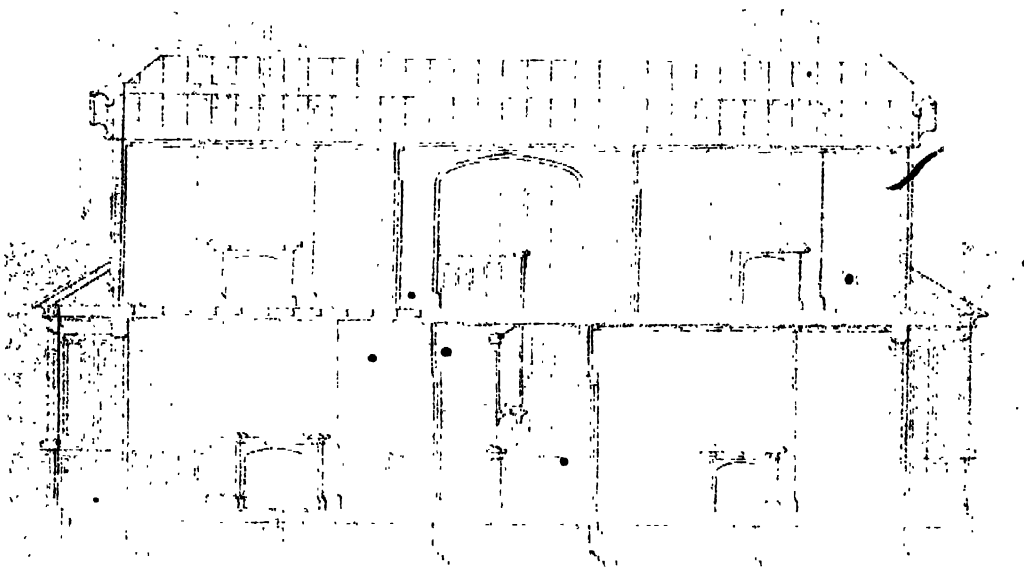
D D. Iron straps, which should be ½-inch by 2½, and properly potted and screwed, as is shown in the sketch.

Figure 2. Shows the manner of fixing the angular posts into the stone plinth.

C C. Stone plinth.

B B. Angular post.

Figure 3. Explains the method of bedding the wood sill upon the stone plinth, and attaching it, by means of a tenon, to the angular



PLAN OF FLOOR

SECTION THROUGH BUILDING

posts, which are to be secured by an iron bolt let through the angular parts into the sills; the other portion shows the manner of stubbing the smaller quarterings into the sill.

It is requisite that a sheet of lead rather larger than the size of the plinth should be placed upon the stone, so that any opening that may be left from the inaccuracy of the workman, may be made airtight, and the water be prevented from lodging in the cavity.

E. Stone plinth.

F. Wood sill.

G. Strutt or quartering.

Figure 4. Is a plan of the construction of the quarterings, brick nogging, plastering, rough casting, &c.

H. Upright quarterings.

I. Brick nogging.

J. Plastering.

K. Plastering and rough casting.

Figure 5. Is a plan of the angular posts of entrance porch.

Figure 6. Is a sketch of the moulded top of the same.

Figure 7. Is the base, and the method of fixing it into the stone plinth.

Figure 8.—A plan of one of the chimney-pots.

Figure 9.—Moulded top of the chimney-shaft.

Figure 10.—Moulded base of the chimney-shaft.

Figure 11.—A section of a portion of the roof, showing the form of the zinc gutter, &c.

L. Rafter.

M. Ceiling joists.

N. Wall-plate.

O. Brick nogging.

- P. Gutter.
- Q. Plastering.
- R. Plaster and rough casting, or cement outside.
- S. Slates.

Figure 12 shows the method of applying the segmental pieces, which are merely pieces an inch thick nailed to the horizontal and vertical quarterings.

- T. Sill.
- U. Horizontal quartering.
- V. Vertical quartering.
- W. Segmental pieces.

Figure 13.—Head of the bay window.

- X. Brick nogging
- Y. Plastering.
- Z. Head.

* Iron casement. A new method of fixing and applying the metal casement has been introduced, those in general use not being air or water tight.

- III. Architrave.
- III. Space for shutters.

Figure 14. —Sill of bay window.

Figure 15. —Door and frame, with panelling, skirting, &c., for principal room.

Figure 16.—Plan of ditto, showing the method of applying the fillets to form small panels.

Figure 17.—Plan and elevation of head and sill of entrance porch.

Figure 18.—Hand rail, and baluster of stairs.

Figure 19.—Skirting of principal room.

Plate IV. exhibits a design for a double cottage, in the Ionic style of architecture; each dwelling containing a kitchen, back kitchen, larder, and water-closet, on the basement floor; parlour and drawing-room on the ground floor; and two bed-rooms and a dressing-room on the chamber-floor.

The basement story is proposed to be 9 feet high from floor-line to ceiling: the kitchen 16 feet by 14 feet; back kitchen or scullery 14 feet by 12 feet 6 inches. A larder under the hall 10 feet by 7 feet 6 inches; and a water-closet 5 feet \times 3 feet. The dotted line below the ground on this elevation, shows the depth it is intended to carry the various foundations, which if erected on a damp soil, or a loose earthy stratum, should be filled in with concrete, and thrown from as great a height as possible into the trenches, while warm. The trench must be excavated to a depth according to the description of soil; for instance, on a clayey soil it would not be necessary to use concrete, but on a loose earth it would be necessary to concrete to the depth of from 12 to 18 or even 24 inches, according to the weight of the building.

Plate IV.

Figure 1.—Principal or entrance elevation.

Figure 2.—Ground plan.

This story is purposed to be 10 feet 6 inches high, and to ascend from the ground-line to the floor-line 2 feet, which is accomplished by 4 steps of 6 inches rise each, introducing you to a small hall, 13 feet by 8 feet; in immediate communication with which, and facing the entrance, are the stairs, which might, if greater seclusion be the object, be divided from the hall, by means of a slight partition. From the hall, or principal passage, you enter the drawing-room or back parlour, communicating with each other by means of suspended folding doors, which, from the method of construction that will be fully explained in a future part of this work, will be found to be more desirable than any other plan hitherto introduced to the notice of the public; the sound, when it becomes necessary to divide the rooms, being entirely prevented from passing from one room to the other. The dimensions of the drawing-room are 17 feet by 15 feet; the parlour 15 feet by 13 feet. Over this story it will be requisite to sound-board, and pug the floors, which is

accomplished at a comparatively small expense, considering the comfort that is derived from it; as nothing can be more annoying than an apartment, with the slightest pretension to domestic comfort, in which the sound is heard passing over head. The bed-rooms will be nearly of the same dimensions as the rooms below, with a dressing-room over the hall. The rooms in the roof may be appropriated to the use of the servants.

Plate V.

Figure 3. Is an elevation, answering to the same plan, and in the same style of architecture; but, in design, much plainer, and, consequently, less expensive.

Figure 4. On the same plate, introduces an elevation in the Tudor or mixed style of old English cottage architecture; being also applicable to the same plan in regard to arrangement.

The selection of either of these designs must entirely depend upon the taste of the parties intending to erect them; and the appearance of the building when executed, will be considerably improved by the surrounding objects or scenery being in keeping with the style adopted. The Ionic style, which is exhibited in the Plates IV. and V., is, on account of its simplicity, the best adapted for suburban cottages, for in the environs of the metropolis, little of that grandeur or sublimity of locality can be found, which would sanction the adoption of the Gothic, or the castellated architecture of the present day; in fact one of the greatest proofs of the skill of the architect, is the adaptation of the style of an erection to the character of the surrounding scenery, thereby avoiding those incongruities and monstrosities which grossly disfigure many of the lately-erected edifices. It is purposed to build the two classical erections (figures 1, 2, and ground plan 3) with bricks, and to execute all the embellishments in Roman cement, stone being introduced only where it becomes absolutely requisite. The basement-floor to be paved with rough York flags; joists for ground-floor to be 9 inches \times 2 $\frac{1}{2}$ inches; trimmers 9 inches \times 3 inches, and covered with 1 $\frac{1}{2}$ -inch yellow deal floor-boards. The chamber-floor to have joists of the same scantling, and boards of a similar description. The roofs to these buildings will require no principal rafters, as the common rafters will fix upon the pole-plate and a ridge-plate that will be bedded upon

the division wall; it will, however, be requisite to have a couple of tie-beams to run across, resting upon each external flank wall of the principal building, coggled, and properly secured, and fixed to the wall-plates, which plates must run all round the building, and be securely scarfed, halved, and dove-tailed at the angles. It is intended for the two small wings to have flats; the principal roof may be covered with slates, and the wings with suitable lead, marine metal, or zinc. The scantling of the timbers for the roofs may be as follows:—wall-plates, 6 inches \times 4½ inches; tie-beams, 10 inches \times 4 inches; pole-plate, 4 inches \times 4 inches; purlins, 5 inches \times 4 inches; ridge-piece, 6 inches \times 2 inches; common rafters, 3½ inches \times 2 inches; ceiling joists, 3 inches \times 2 inches; struts, 3 inches \times 2 inches; joists for wings, 5 inches \times 2 inches; bond timber, 4½ inches \times 3 inches. The chamber-plan will be sound-boarded and pugged. The inside finishing of these houses should be kept as nearly consistent with the general costume of the buildings as possible; but as a great deal depends upon the taste and fancy of the person building, without materially altering the expense, it may be, perhaps, judicious not to enlarge further on the subject. The elevation (figure 4) is intended to be built with bricks or flints, with stone quoins, coping, plinth, jambs and mullions of windows.

The turret, which is a general receiver of smoke from the various flues, and forms a prominent feature in this building, must also be of stone. The method of adapting this for its intended purpose, and which we have executed with great success, is by conducting the smoke into a small chamber, constructed immediately under the base of the turret, and which acts by means of valves; over which is placed an iron fly, similar to that of a smoke-jack, by which means it obtains free egress, and the possibility of a smoky chimney is entirely prevented. The scantling of the various timbers, with the exception of the roof, may be the same as those already described: those for the roof, being differently applied, may be of somewhat less dimensions.

The interior of this building should be fitted up in character with the external elevation; but, as the style is plain, and few or no mouldings required, plain chamfers and hollows being the characteristics of such buildings, it is presumed, that with the accompanying sheet of details, the builder will be enabled to carry this, as well as the preceding elevations, into execution without difficulty.

To finish these designs, in a complete and workmanlike manner, will require the following sums, viz.—Elevation, figure 1, £1135; Elevation, figure 2, £985; Elevation, figure 3, £960.

D E T A I L S.

Plate VI. • • •

DETAILS TO PLATE IV.

Figure 1.—Perspective sketch of the Ionic capital in the front elevation.

- „ 2.—Base of ditto.
- „ 3.—Principal cornice of elevations 1 and 3.
- „ 4.—Frieze, fillet, and architrave for ditto.
- „ 5.—Front view of truss for Venetian windows.
- „ 6.—Side view of truss.
- „ 7.—Cap of antæ.
- 8.—Architrave round windows.
- 9.—Stone-work for balcony of windows to elevation, Fig. 1.
- 10.—Section of rail for ditto.
- 11.—Cap of pilaster to same elevation.
- „ 12.—Base to ditto.
- „ 13.—Cornice for back parlour.
- „ 14.—Cornice for front ditto.
- „ 15.—Principal bed-room cornice.
- „ 16.—Secondary ditto.

DETAILS TO ELEVATION, FIGURE 4, PLATE V.

Figure 17.—Stone coping.

- „ 18.—Head of windows.
- „ 19.—Mullion of ditto.
- „ 20.—Sill of the same.
- „ 21.—Elevation of chimney pot or stone-turret.
- „ 22.—Plan of ditto, showing iron fly, or smoke ventilator.
- „ 23.—A section of stone gutter, cornice, and portion of roof.

A. Cornice. B. Gutter. C. Wall-plate. D. Rafter. E. Ceiling joists. F. Brick-work. G. Plaster and cornice. H. Battens and slates.

Figure 24.—Plan of stone jamb, frame, door, &c., for principal entrance. A. Stone jamb. B. Door-frame. C. Door. D. Architrave.

The design represented in Plate VII. is a composition of the Italian, and the plain brick building adopted for cheapness in the present day; and in many situations, would be more consistent than a purer style. It is however strongly recommended, in the erection of those edifices in which an intermixture of styles is adopted, to pay particular attention to the accordance which actually subsists between them; for nothing imparts a more grotesque or unseemly appearance to a building than the introduction of two styles, which do not harmonize with each other; and in all cases it is a certain indication of a vitiated taste, and a direct departure from the genuine principles of architectural beauty.

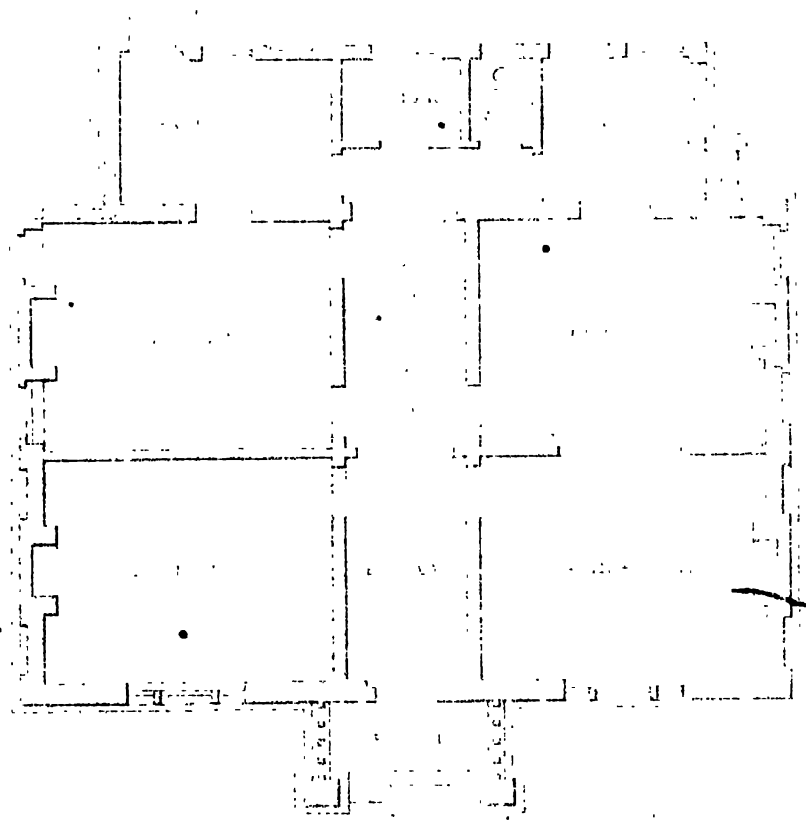
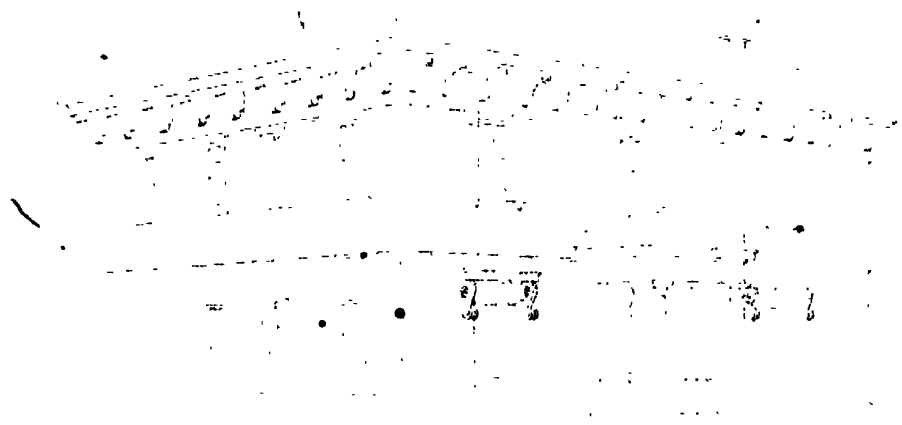
With a proper view to economy, the walls are intended to be built with bricks, and the embellishments to be finished with Roman cement: the contrast between them will produce a pleasing and imposing effect, provided the bricks be judiciously selected. If the edifice be erected in a country where a plentiful supply of stone can be procured, the use of it would be preferable to that of cement, in consequence of its greater durability, and its decided superiority over every material professing to be an imitation of it. On the same principle cement is preferable to brick, as it possesses a beauty and elegance which can never be attained by the latter material, however excellent the quality may be. A villa built with brick alone, has a mean and secondary appearance; nor even in point of economy is it to be recommended, for as the bricks so used must be of the first class in point of durability and colour, the difference in the expense between their use and that of cement, would in general preponderate in favour of the latter. It must, however, be taken into consideration, that in the adoption of cement, a very scrupulous attention ought to be paid to its selection, for that which is not properly calcined, nor kept perfectly free from the action of the atmosphere after being ground, loses the greater portion of its virtue. Hoping to check the fraud so commonly practised of substituting a spurious article for one that is genuine, and of thus obviating the disappointment which must necessarily occur, we recommend the adoption of the following process as a means of testing the goodness of the article. Take a handful of the cement, and mix it with water to a proper consistency: if caloric be generated, and the mass harden in about five or eight

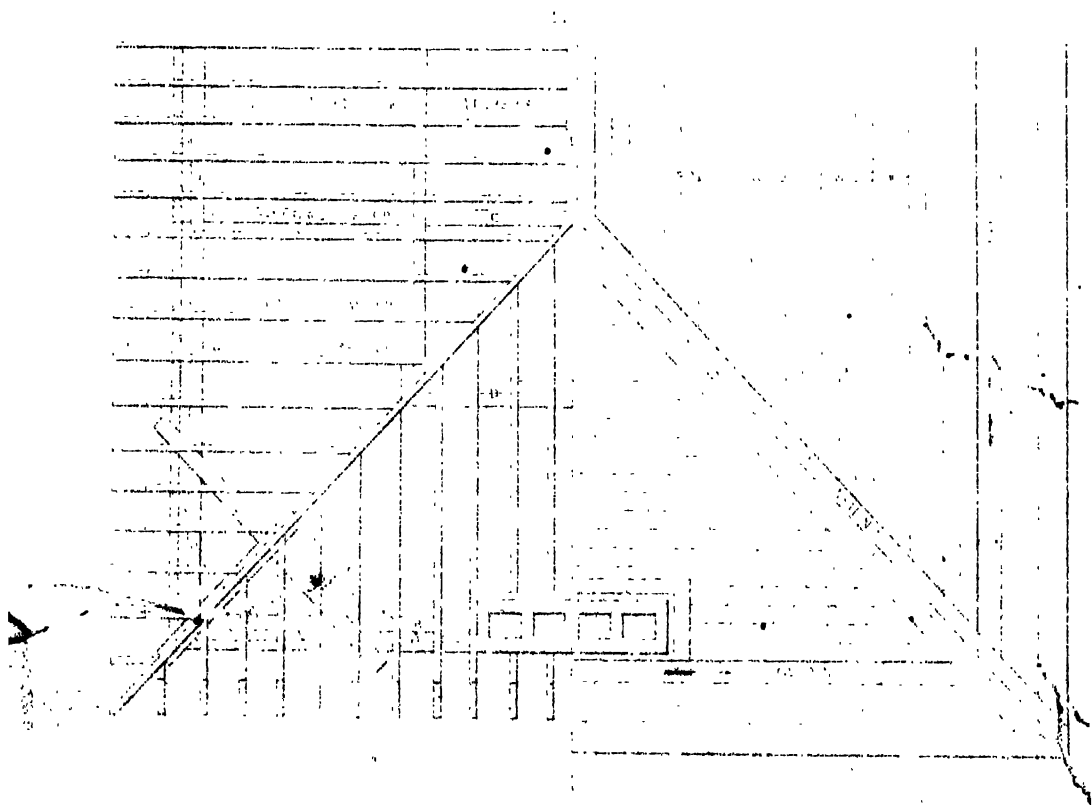
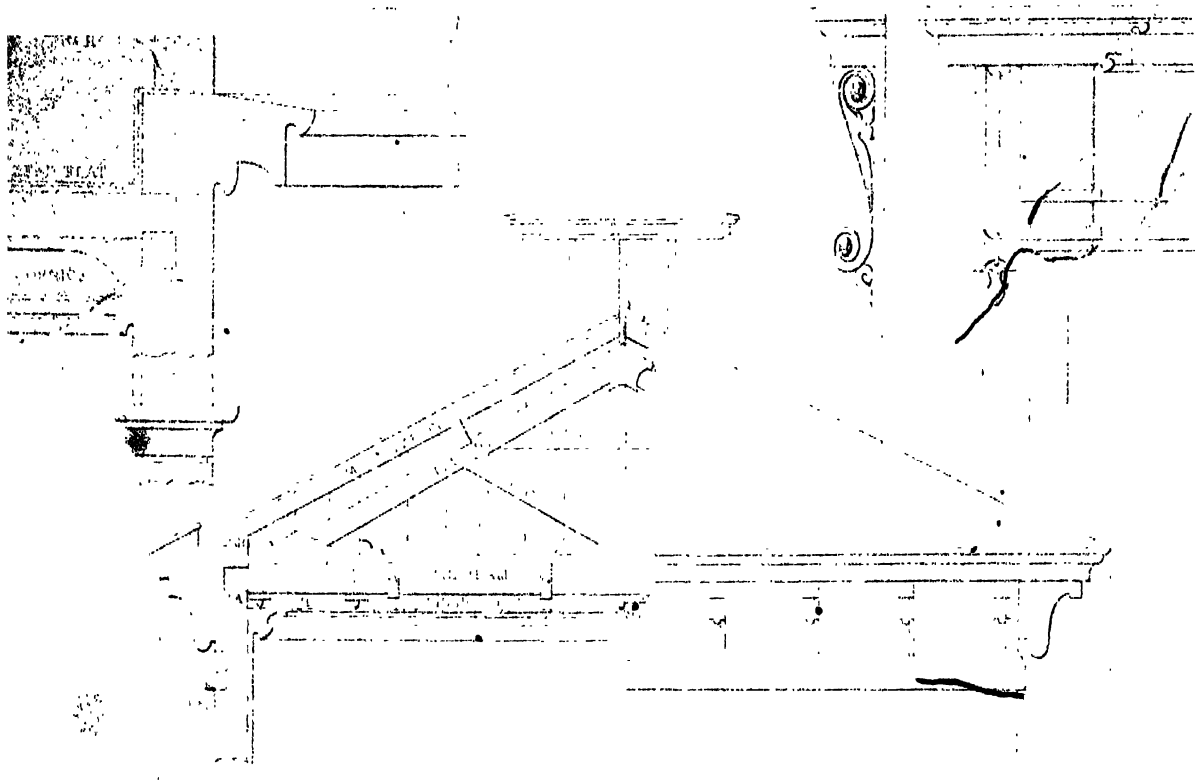
minutes, it may be considered good and suitable for the intended purpose. It may indeed be advanced as an objection by the workman, that the time above-mentioned is too quick to allow of the proper working of the cement; but he must take into his consideration that the mixture of the sand, and the necessary exposure to the atmosphere, will greatly diminish that quickness, and allow a sufficient time for its proper working. In respect to the mixing of lime for laying bricks or for plastering, much must necessarily depend upon its strength, which is increased or diminished according to the quantity of sand that is mixed with it; nor is the quality of the sand a matter of trifling consideration: the pulverized gravel of the horse-roads is preferable to any other that can be selected. The lime itself differs also so much, according to the place from which it is brought, that no specific rules can be laid down for its selection. It will be judicious, therefore, to leave the purchase of it to those who are competent judges of its properties.

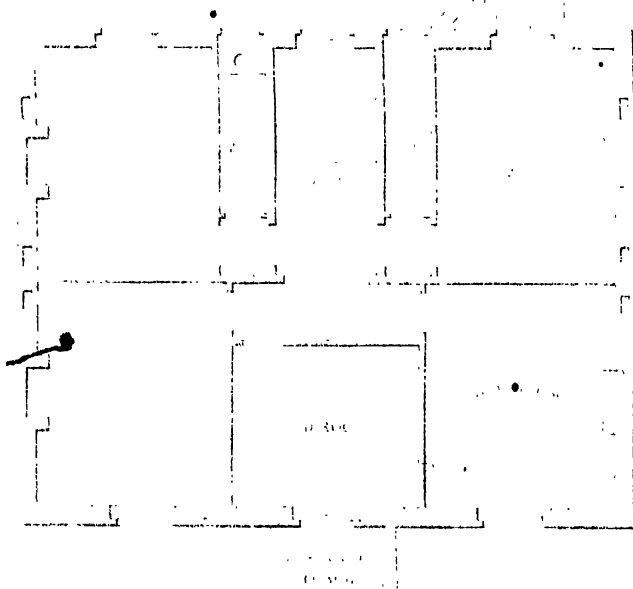
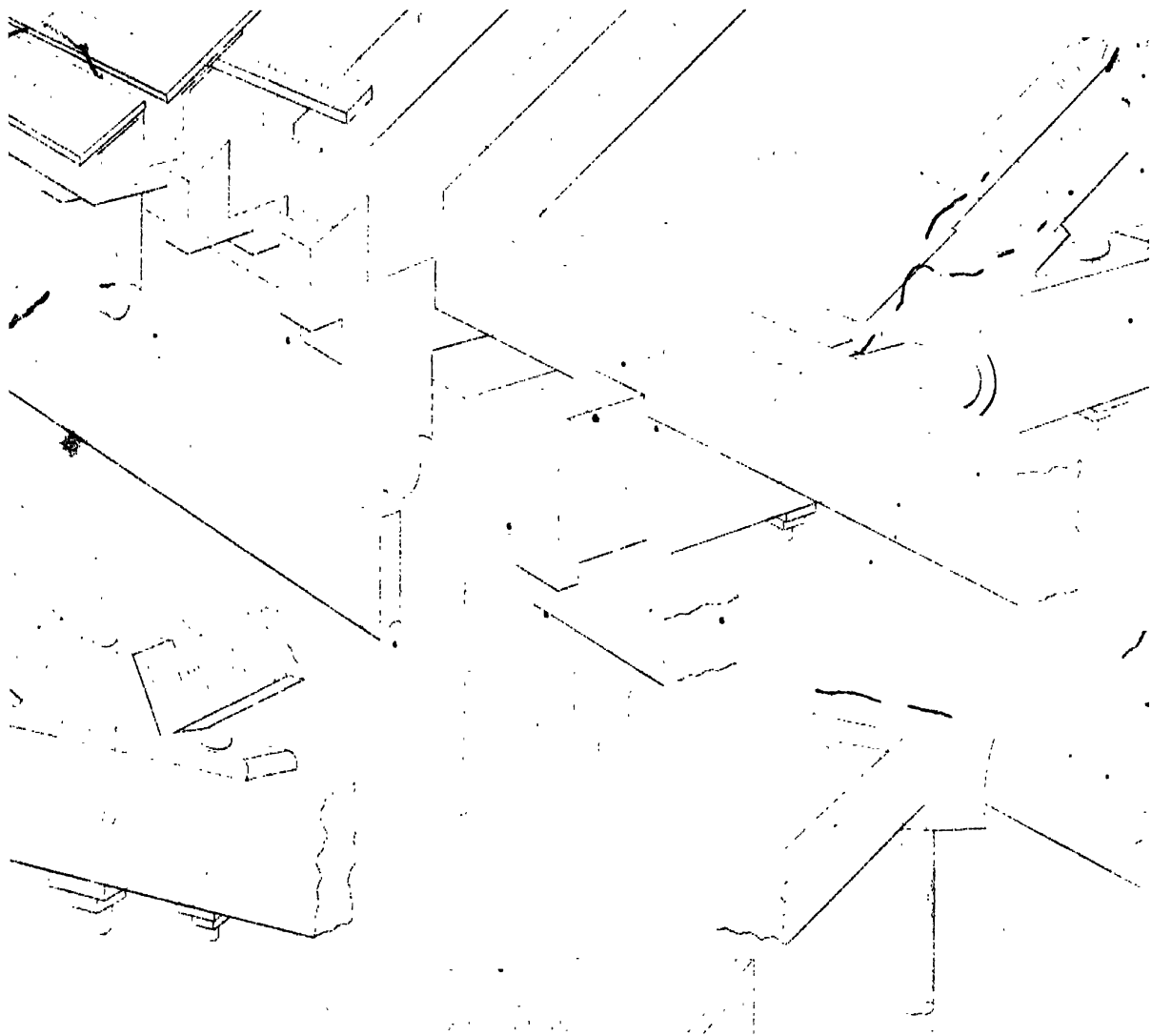
Plate VII.

Figure 1. Is a perspective view of the design, exhibiting the end and principal elevation, with a portico: the building may be executed with any suitable material, as before described. Over the end elevation there are four windows, two of which are blank, as well as the four on the upper story. In order to give the building a light appearance, these blank windows should have frames and glazed sashes.

Figure 2. Is the ground floor, consisting of a dining-room, 15 feet by 12 feet; drawing-room, of the same dimensions; porch, 10 feet by 5 feet; passage, 12 feet by 6 feet; staircase, of the same dimensions; kitchen, 14 feet by 12 feet; library, same size; back kitchen, 10 feet 6 inches by 8 feet; conservatory, 8 feet by 7 feet; larder, 6 feet by 5 feet; and water closet, 5 feet by 4 feet. The height of this story is intended to be 10 feet, and to be sound-boarded, and pugged between the floor-joists, which are to be 9 by 2½, properly fixed to the wall-plates according to the method before described.







D E T A I L S.

Plate VIII.

Figure 1.—A plan and section of the roof drawn to a scale of one inch and three-quarters to 10 feet, one half of which shows the timber, and the other the finishings.

A. Wall-plate. B. Pole-plate. C. Principal rafters. D. Purlins. E. Common rafters. F. Bracket and gutter-bearers. G. Binders, framed into tie-beam. H. Ceiling-joists. I. Angle tie. J. Ridge board. K. Strutts.

Figure 2.—A section of the cornice, antæ, &c. of entrance porch.

Figure 3.—Elevation of principal stone window, dressings, &c.

Figure 4.—Side elevation of truss for the same.

Plate IX.

Is the chamber plan, consisting of a series of five bed-rooms, water-closet, and small store-room, 9 feet in height; the two principal front bed-rooms being 13 feet by 12 feet; the other 12 feet by 9 feet; two back bed-rooms, 13 feet by 12 feet; staircase 13 by 6 feet, with a water-closet and store-closet on each side. On the top of this Plate are shown the details of the various portions of the roof, exhibiting a gutter formed in the eaves, without in any degree interfering with external appearances; this form should be introduced wherever there is the slightest approach made to the appearance of Italian architecture. A reference will be found to these details in the explanation given in that part of the work appropriated particularly to that subject; it may not, however, be considered improper here to observe, that the construction of the principal rafters is the same as that which has been long established, but the method of receiving the abutments into iron shoes, and confining the whole by an iron rod, is of recent invention, a design which originated from the circumstance of enriched and elaborate ceilings failing or cracking by the shrinking of the principal timbers to which they were attached. If the cast metal shoes,

bolts, &c. be cast according to the calculated pressure or force which they have to resist, it will be found that the ultimate expense will not be greater than that attending the usual way of construction, and the probability of a broken ceiling, cornice, &c. entirely removed.

D E T A I L S.

Plate IX.

Figure 2.—Head and bolt of cast metal king to principal rafters. The substance of this bolt should be an inch and a half in diameter: a less dimension would be sufficient, if the purity of the metal could be depended upon; but in the construction of buildings it is better to be rather too strong than too weak.

Figure 4.—Cast metal shoe for bottom of the same. These shoes should be cast with the best and softest metal, and as true as possible to the inclination and abutments of the struts; if properly cast, a substance of three-eighths of an inch round the abutments, as well as the bed upon the tie beam, will be sufficient.

Figure 5.—A sketch to a larger scale of a portion of the roof, showing the construction of the eaves, gutter, &c. This construction has been executed, and found to answer extremely well. It must be perceived that the application is founded upon good principles, inasmuch as every bracket acts as a cantileaver against the front, and under the pole-plate, each of which comes down alternately to the string course, and forms the consols under the eaves.

A. Brick wall. B. Stone string course. C. Bracket and gutter bearer. D. Alternate gutter bearer without bracket. E. Pole-plate. F. Common rafter. G. Batten. H. Slates. I. Tie beam. J. Principal rafter. K. Iron shoe for receiving the foot of ditto.

This building according to the drawing, and the description thus given, may be completed for the sum of about £775.

The cottage represented in Plate X. may be said to belong to the olden style of English architecture, at a period when it began to be enriched by foreign models, and those excrescences were removed, by which, in earlier periods, it was so unfavourably distinguished. A uniformity of design was at one time the acknowledged characteristic of English architecture, when science had very little share in the erection of our private edifices, particularly those of a humbler class; and durability was chiefly regarded, whilst comfort and utility were frequently neglected.

In the accompanying design, it has been the object of the architect to combine economy and comfort with utility and convenience, at the same time that the elegance of the external appearance has not been overlooked. It will be found to be peculiarly adapted for a suburban situation, where the surrounding scenery may be generally said to be more in unison with a chaste and simple style of architecture, than with one which is elaborate or massive. It is, however, an inattention to the existing localities of the intended edifice, that constitutes one of the most serious drawbacks to that exterior harmony and consistency which should characterise our modern edifices, independently of that incongruous mixture of styles, which a perverted taste, combined with ignorance of the most common principles of architectural science, has introduced into the majority of our suburban villas. If erected in the middle of a lawn, the edifice will have a very picturesque appearance.

This cottage is constructed in a similar style of architecture to the design represented in Plate I., and the workmanship is so nearly of the same description, that the sheet of details, Plate III., may be referred to for the erection of this edifice. In the execution of the design it is intended to have a basement story, consisting of a kitchen, 14 feet by 12 feet; scullery, 9 feet by 7 feet; larder, of the same dimensions; servants' room, 14 feet by 12 feet; with staircase, water-closet, &c. This story should be 8 feet 6 inches high, and built, to within 6 inches of the ground-line, with bricks, flints, or stone, according to the produce of the place where it is intended to erect it. If built with bricks, flints, or iron-stone, the plinth should be stuccoed with Roman cement, for receiving the wood sill of the other portion of the super-

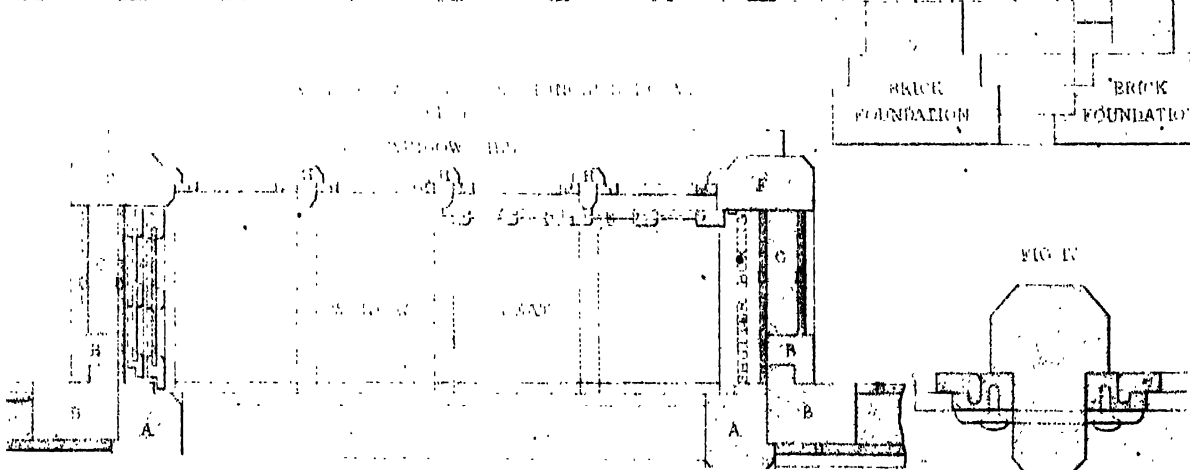
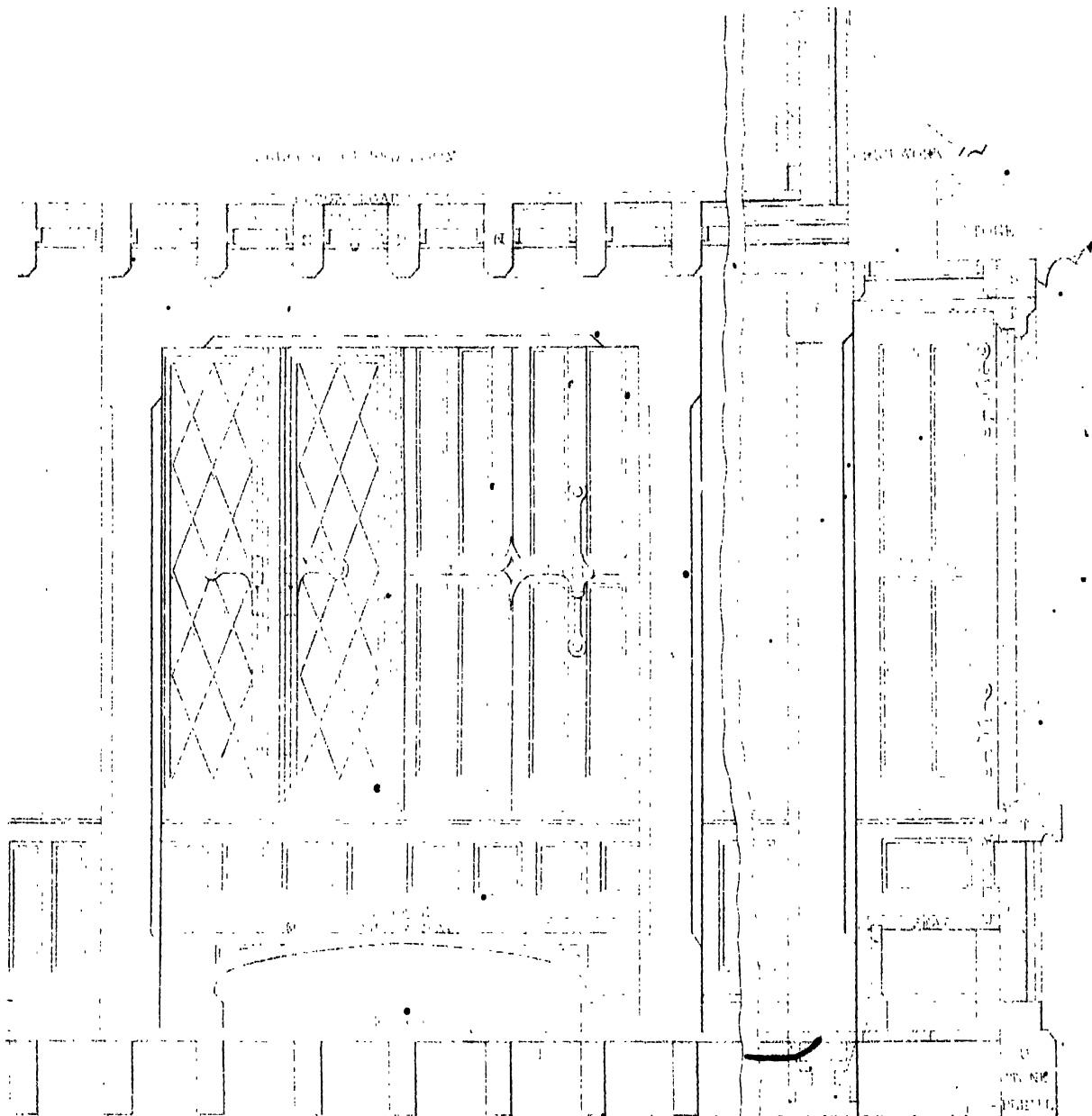
structure. The first consideration which ought to be given to the basement story is the drainage, which in all buildings is of the greatest importance, not only for the dryness of the habitation, but also for the prevention of any unpleasant effluvia that might arise, from the imperfect method in which drains are generally executed; which will be fully explained in a subsequent part of this work, together with a new method of construction. After the drains are laid and perfect, it would be advisable to fill in to the depth of 12 or 15 inches, with dry lime rubbish, upon which may be laid stone, brick, or asphalte, either of which materials will form a dry floor for the basement. Particular care should be taken, at the same time, to give a proper descent to the various sinks, which should be in immediate communication with the drains. The internal finishings of this floor are intended to be as plain as possible, and consequently require no explanation.

The ground plan consists of a dining-room, 15 feet by 12; drawing-room of the same dimensions; library, 13 feet by 11; hall and staircase of the same dimensions. The dining and drawing-rooms are, in a small degree, increased in size by the bay windows, which, in an erection of this description, have a pretty and consistent internal and external effect. The scantling of the joists for this floor should lie from front to back, and must be 9 inches by $2\frac{1}{4}$, herring-bone trussed, sound-boarded and pugged, and laid with $1\frac{1}{4}$ yellow deal. The finishings of all the rooms must be consistent with those shown on Plate XI. This story is intended to be 9 feet 6 inches in height.

The chamber plan shows a series of five bed-rooms of the same dimensions as the rooms below. The floor joists to be of the same scantling, and the boards of the same thickness as those described for the ground floor, and to be sound-boarded, pugged, &c.; the finishing should be in the same style, but, if possible, plainer. The roof of this building should be constructed in a similar manner to that described in Plate III., and covered with slates, tiles, lead, zinc, reeds, or straw, either of these materials producing a pleasing and picturesque appearance.

Plate X.

Figure 1. —A perspective view of the design, showing the front elevation, and one end of the building. The ascent to the library window,



which is a casement, is by means of four steps, over which, from the bed-room, is introduced a characteristic balcony, supported by wood cantilevers, which forms a principal feature in this elevation. The end of this view exhibits the external elevation, &c. of one of the bay windows.

Figure 2.—Elevation of principal front: scale, half an inch to 10 feet.

Figure 3.—Plan of the basement story.

Figure 4.—Plan of ground or principal story.

Figure 5.—Chamber plan.

DETAILS.

Plate XI.

Shows the method of fitting up one of the bay windows, and fixing the joists of ground and chamber floors to one of the principal rooms. It will be observed in the details given in this plate, that a new casement, with window-head, sill, &c., has been introduced, so formed that it must be as impervious and secure as the most modern sash or French casement; provision being made at the same time for taking off the condensed water, which at all times should be a consideration in rooms where domestic comfort is studied, but which is very frequently entirely omitted, even in buildings of magnitude. A newly-invented spring fastening has also been introduced to these casements, and one for the shutters, which, in consequence of their simplicity, excel any fastening hitherto presented to the public. (See details for casements, shutter and window fastenings, &c.)

Figure 1.—Plan of bay window, one-half of which represents the shutters folded in their boxings, and the other closed, as well as the method of framing the angular posts, wood mullions, &c.

A A. Angular posts. B B. External and internal quarterings. C C. Brick nogging. D D. Plastering. E E. Shutter boxings. F F. Angular stancheons. G. Window sill. H. Mullions.

Figure 2.—Elevation of the same. The letters here employed designate the same parts as on the plan, so far as they correspond; the remainder will refer as follows:—

I. Shutters. J. Shutter fastenings. L. Framed back. M. Window-seat. N. Floor joists of chamber story. O. Floor boards. P. Pugging and sound-boarding. Q. Plastering. R. Boards and joists of ground floor.

Figure 3.—A section through the same window, to which the same letters apply, with the following in addition:—

R. Brestsummer. S. Window head. T. Window sill and window head. U. Stone plinth. V. Brick foundation, which, if the basement story be added, must, of course, be taken sufficiently low for that purpose.

Figure 4.—A mullion of the window to a large scale, showing the method of fixing the metal casement to it; also a wind and water-tight manner of forming the rabbet on the casement.

Plate XII.

Figure 1.—A perspective view of one of the principal rooms, exemplifying the finishing of the ceiling, walls, wainscoting, chimney-piece, &c.

This style of internal finishing has a pleasing and romantic appearance, if properly executed, and in costume with the external portions of the erection. The longitudinal beams of this ceiling are of wood; the small transverse beams are formed in plaster, all of them to be coloured in imitation of oak; to give relief to the ceiling, the walls are finished in rough stucco, coloured and jointed to imitate stone; the wainscoting may be framed of inch deal, and filleted to form small panels, as described and shown in Plate III. of this work.

The chimney-piece is purposed to be of stone, and might be adopted where an open fire-place is not preferred, which, although more in character with this style of building, has for some years past been dispensed with.

Figure 2.—A plan of the chimney-piece: scale, half an inch to a foot.

Figure 3.—Elevation of the same.

Figure 4.—Capping half full size.

Figure 5.—Bracket and part of shelf, quarter real size.

The other principal rooms on this floor might be fitted up in a similar manner. The hall and stairs should be in keeping with the room described. The chamber floor may be finished quite plain.

This building, according to the drawings, may be finished for the sum of £645.

